

FIGURE 1 A  
NUCLEOTIDE SEQUENCE

>protease D-G (SEQ.ID.NO.:1)

CAACTTCACTGTAGGGCTGTTAATCAAGCTGCCAAAGTCCCCAATCACTCCTGGA  
ATACACAGAGAGAGGCAGCAGCTGCTCAGCGACAAGGATGCTGGCGTGAGGGACCAA  
GGCCTGCCCTGCACTCGGGCCTCCTCCAGCAGTGTGACCAGGGACTCTGACCTGCTG  
GCCAGCCAGGACCTGTGTGGGGAGGCCCTCCTGCTGCCCTGGGGTACAATCTCAGCTCC  
AGGCTACAGGGAGACCGGGAGGATCACAGAGCCAGCATGGATCCTGACAGTGATCAACCT  
CTGAACAGCCTCGATGTCAAACCCCTGCGCAAACCCGTATCCCATGGAGACCTTCAGA  
AAGGTGGGATCCCCATCATCATAGCACTACTGAGCCTGGCGAGTATCATATTGTGGTT  
GTCCTCATCAAGGTGATTCTGGATAAAATACTACTTCCTCTGCGGGCAGCCTCTCCACTTC  
ATCCCGAGGAAGCAGCTGTGTGACGGAGAGCTGGACTGTCCCTGGGGAGGACGAGGAG  
CACTGTGTCAAGAGCTTCCCCGAAGGGCCTGCAGTGGCAGTCGCCTCTCCAAGGACCGA  
TCCACACTGCAGGTGCTGGACTCGGCCACAGGAACTGGTTCTGCGCTGTTGACAAC  
TTCACAGAAGCTCGCTGAGACAGCCTGTAGGCAGATGGCTACAGCAGCAAACCCACT  
TTCAGAGCTGTGGAGATTGGCCAGACCAGGATCTGGATGTTGAAATCACAGAAAAC  
AGCCAGGAGCTCGCATCGGAACTCAAGTGGCCCTGTCTCTCAGGCTCCCTGGTCTCC  
CTGCACTGTCTTGCCTGTGGGAAGAGCCTGAAGACCCCCCGTGTGGTGGGGAGGAG  
GCCTCTGTGGATTCTTGGCCTTGGCAGGTCAAGTACGACAAACAGCACGTCTGT  
GGAGGGAGCATTGGACCCCCACTGGGTCTCACGGCAGCCACTGCTTCAGGAAACAT  
ACCGATGTGTTCAACTGGAAGGTGCGGGCAGGCTCAGACAAACTGGCAGCTTCCATCC  
CTGGCTGTGGCCAAGATCATCATCATTGAATTCAACCCATGTACCCAAAGACAATGAC  
ATCGCCCTCATGAAGCTGCAGTCCACTCACTTCTCAGGCACAGTCAGGCCATCTGT  
CTGCCCTCTTGATGAGGAGCTCACTCCAGCCACCCACTCTGGATCATTGGATGGGGC  
TTTACGAAGCAGAACATGGAGGGAAAGATGTCTGACATACTGCTGCAGGCGTCAGTCCAGGTC  
ATTGACAGCACACGGTCAATGCAGACGATGCGTACCTGGGGAAAGTCACCGAGAAGATG  
ATGTGTGCAGGCATCCCGAAGGGGTGTGGACACCTGCCAGGGTACAGTGGTGGGCC  
CTGATGTACCAATCTGACCAAGTGGCATGTGGATGGCATTGTTAGCTGGGCTATGGCTGC  
GGGGGCCGAGCACCCAGGGTATACACCAAGGTCTCAGCCTATCTCAACTGGATCTAC  
AATGTCTGGAAGGCTGAGCTGTAATGCTGCTGCCCTTGCACTGCTGGAGCCGCTTCC  
TTCCTGCCCTGCCACCTGGGATCCCCAAAGTCAGACACAGAGCAAGAGTCCCCTTGG  
GTACACCCCTCTGCCACAGCCTCAGCATTCTGGAGCAGCAAAGGGCTCAATTCTTA  
TAAGAGACCCCTCGCAGCCCAGAGCGCCAGAGGAAGTCAGCAGCCCTAGCTGGCCACA  
CTTGGTGTCTCCAGCATCCAGGGAGAGACACAGCCACTGAACAAGGTCTCAGGGTAT  
TGCTAAGCCAAGAAGGAACCTTCCACACTACTGAATGGAAGCAGGCTGTCTGTAAAAG  
CCCAGATCACTGTGGCTGGAGAGGAGAAGGAAAGGGTCTGCGCCAGCCCTGTCCGTCTT  
CACCCATCCCCAAGCCTACTAGAGCAAGAACCAAGTGTAAATATAAAATGCACTGCCTAC  
TGTTGGTATGACTACCGTTACCTACTGTTGTCATTGTTATTACAGCTATGCCACTATTA  
TTAAAGAGCTGTGTAACATCA

FIGURE 1 B  
AA SEQUENCE

>protease D-G (SEQ.ID.NO.:2)

MDPDSDQPLNSLDVKPLRKPRIPMETFRKVGIPIIIALLSLASIIIVVVLIKVILDKYYF  
LCGQPLHFIPRKQLCDGELDCPLGEDEEHCVKSFPPEGPAVAVRLSKDRSTLQVLDSATGN  
WFSACFDNFTEALAEACRQMGYSSKPTFRAVEIGPDQDLDVVEITENSQELRMRNSSGP  
CLSGSLVSLHCLACGKSLKTPRVVGEEASVDSWPWQVSIQYDKQHVCGGSILDPHWVLT  
AAHCFRKHTDVFNWKVRAGSDKLGSFPSLAVAKIIIEFNPMYPKDNDIALMKLQFPLTF  
SGTVRPICLPFFDEELTPATPLWIIGWGFTKQNGGKMSDILLQASVQVIDSTRCNADDAY  
QGEVTEKMMCAGIPEGGVDTQCQGDGGPLMYQSDQWHVVGIVSWGYZGCZGPSTPGVYTKV  
SAYLNWIYNVWKAEL

FIGURE 2  
PHYLOGENETIC TREE

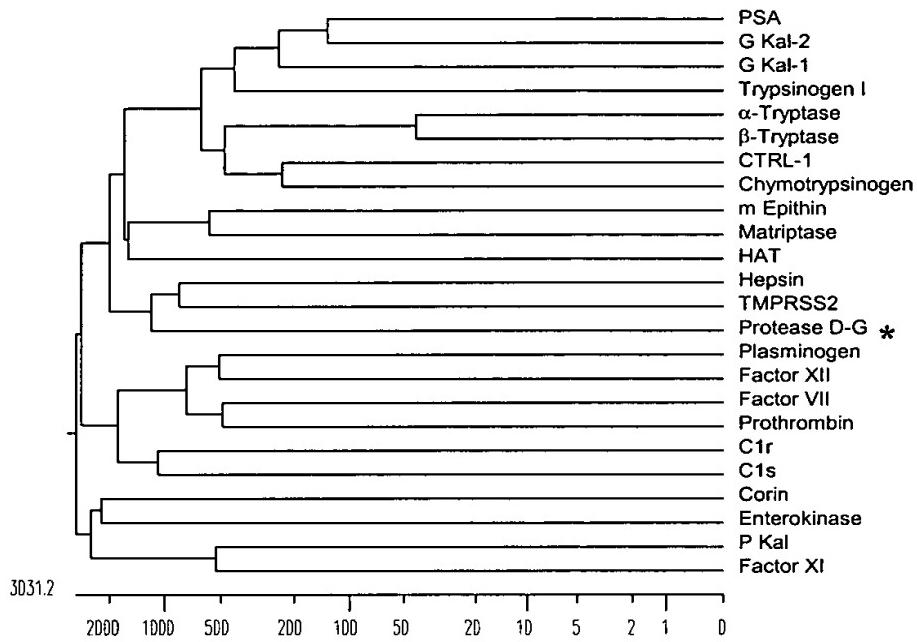


FIGURE 3  
TISSUE DISTRIBUTION

Protease D-G mRNA Tissue Distribution

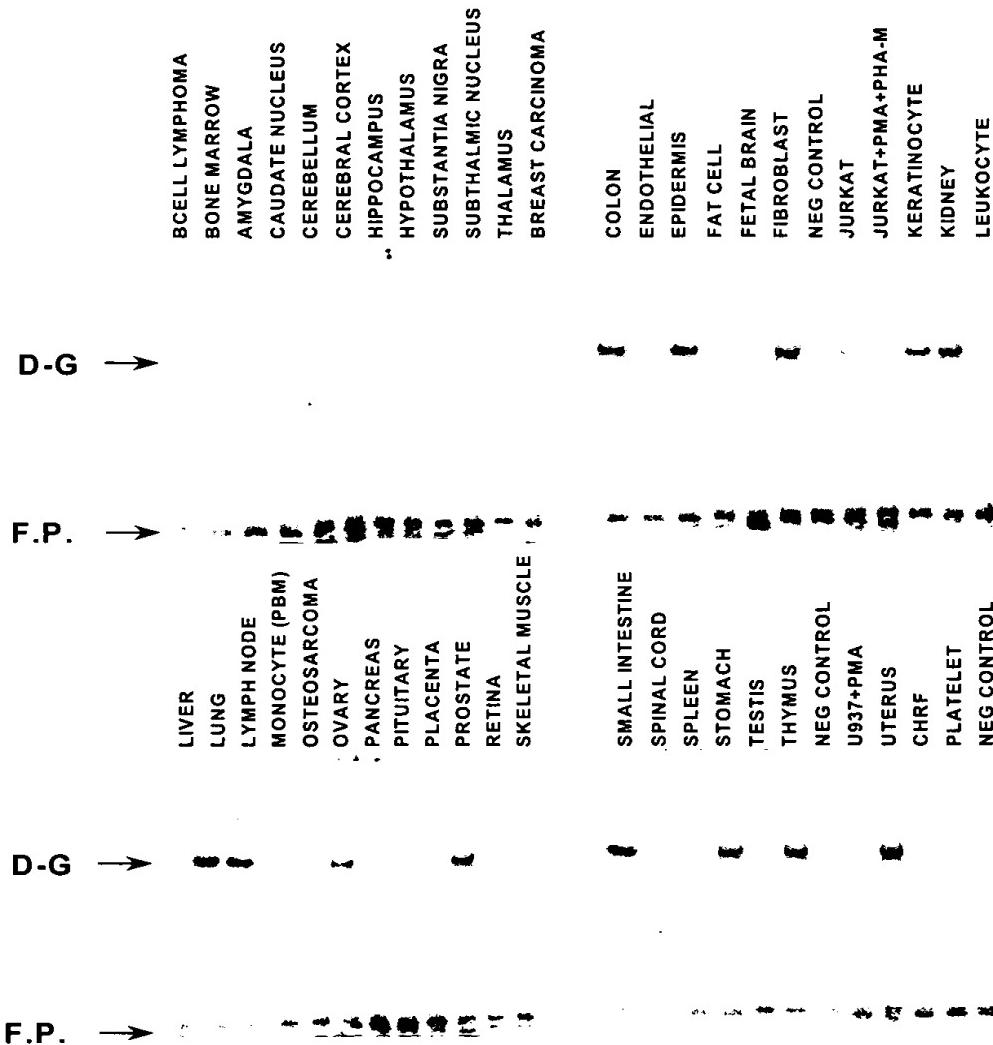


FIGURE 4 -A  
CONSTRUCT NUCLEOTIDE SEQUENCE

>PFEK-D-G-HIS ERI-HCII (SEQ. ID. NO.: 8)

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GAATTCAACCACCATGGACAGCAAAGGTTCGTCGCAGAAATCCCGCTGCTCCTGCTGCTG
GTGGTGTCAAATCTACTCTTGTGCCAGGGTGTGGTCTCCGACTACAAGGACGACGACGAC
GTGGACGCGGCCGCTCTTGCTGCCCTTGTGATGATGACAAAGATCGTGGGGCTAT
GCTCTAGATGTGGATTCTTGGCTTGGCAGGTCAAGCATCCAGTACGACAAACAGCACGTC
TGTGGAGGGAGCATTCTGGACCCCCACTGGGTCTCACGGCAGGCCACTGCTTCAGGAAA
CATACCGATGTGTTCAACTGGAAGGTGCAGGCTCAGACAAACTGGCAGCTTCCA
TCCCTGGCTGTGGCCAAGATCATCATCATTGAATTCAACCCATGTACCCAAAGACAAT
GACATCGCCCTCATGAAGCTGCAGTCCCCTCACTTCTCAGGCACAGTCAGGCCATC
TGTCTGCCCTTCTTGATGAGGAGCTCACTCCAGCCACCCACTCTGGATCATGGATGG
GGCTTACGAAGCAGAACGGAGGAAAGATGTCTGACATACTGCTGCAGGCGTCAGTCCAG
GTCATTGACAGCACCGTGCAATGCAGACGGATGCGTACCTGGGGAAAGTCACCGAGAAAG
ATGATGTGTGCAGGCATCCCGAAGGGGGTGTGGACACCTGCCAGGGTGACAGTGGTGGG
CCCCTGATGTACCAATCTGACCAGTGGCATGTGGTGGCATCGTAGCTGGGTATGGC
TGCGGGGGCCGAGCACCCAGGGTATACACCAAGGTCTCAGCCTATCTCAACTGGATC
TACAATGTCTGGAAGGCTGAGCTGTCTAGACATCACCACCATCACTAGCGCCGCTT
CCCTTAGTGAGGGTTAATGCTTCCAGCAGACATGATAAGATACTTGATGAGTTGGAC
AAACACAACTAGAAATGCAGTGAAAAAAATGCTTATTGTGAAATTGTGATGCTATTG
CTTATTGTAAACCATTATAAGCTGCAATAAACAGTTAGCTGTCAGAGAAGTACTAGAG
GATCATAATCAGCCATACCACATTGTAGAGGTTACTGCTTAAAAAACCTCCCACA
CCTCCCCCTGAACCTGAAACATAAAATGAATGCAATTGTTGTTAAC
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FUSION PROTEIN

>PFEK-D-G-HIS (SEQ. ID. NO.: 9)

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MDSKGSSQKSRLLLLLLVSNLLLCQGVVSDYKDDDDVDAAALAAPFDDDKIVGGYALDVDS
WPWQVSIQYDKQHVCAGGSILDPHWVLTAAHCFRKHTDVFNWVKVRAGSDKLGSFPSLAVAKII
IIEFNPMYPKDNDIALMQLQFPLTFSGTVRPICLPFDEELTPATPLWIIGWGFTKQNGGKM
SDILLQASVQVIDSTRCNADDAYQGEVTEKMMCAGIPEGGVDTQCQGDGGPLMYQSDQWHVV
GIVSWGYZCGGPSTPGVYTKVSAYLNWIYNVWKAELSRHHHHHH
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FIGURE 4-B

FIGURE 5  
PAGE - WESTERN BLOT

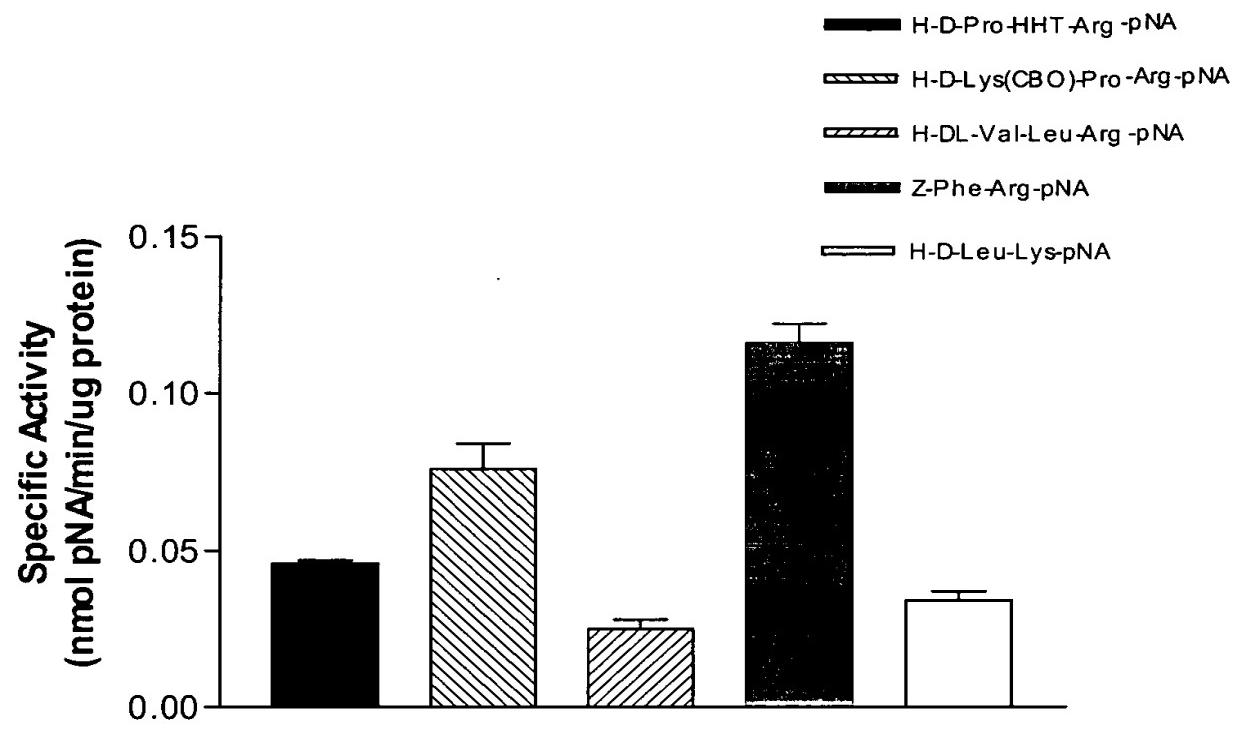
**Protease D-G**

1 2 3 4 5  
- + - + EK

111.0  
73.0  
47.5  
33.9  
28.8

FIGURE 6

**Chromogenic Activity of Protease D-G**



H = free amine  
D = D-isomer  
CBO = carbobenzoxy  
HHT = hexahydrotyrosyl  
Z = benzyloxycarbonyl  
pNA = p-nitroanilide  
DL = D- and L- isomers